

[illegible]

Mount vent fan or exhaust fan with hosing of sufficient length to reach top far end of tank (valve box or cold box)	Fall from height	OSHA approved platforms or man lift, training	N	1	1	5	2	10								
Enter the tank	ODH	Gas sampling probe inserted prior to entry, appropriate atmosphere testing performed with functionally-tested monitor with a valid calibration date, procedures, hard hats if required for task, safety glasses if required for task, training to assure oxygen range is above 19.5%, personal oxygen monitor, backup person/watch	N	1	1	4	2	8								
Enter the tank	Hazardous Energy Sources	Physical barrier preventing entry under vacuum, shutdown insulating vacuum pumping system prior to entry and fill the space with room air, procedures for entry, pre-approved LOTO plans, hard hats, Lockout Tagout hazardous energy sources where applicable, safety glasses, training, backup person/watch	N	1	1	4	2	8								
Cutting pipes with electrical tools	Electrical shock	Use of GFI, training, proper tools for the job properly maintained tools, work planning, procedures, PPE, backup person/watch	N	2	5	1	2	20								
Cutting pipes	Cuts	Gloves, training, proper tools for the job properly maintained tools, work planning, procedures, PPE, backup person/watch	N	2	5	1	2	20								
Cutting pipes	Eye Injuries from Chips	Training, collection of chips with vacuum, work planning, procedures, safety glasses, backup person/watch	N	2	5	1	2	20								
Cutting pipes	Burns	Gloves, training, proper tools for the job properly maintained tools, work planning, procedures, backup person/watch	N	2	5	1	2	20								
Cutting pipes	Struck by Falling Pipe	Appropriate rigging and supports, work planning, backup person/watch	N	2	5	3	1	30								
Fabricate new pipe sections	Cuts	Gloves, training, pipe stands, proper tools for the job properly maintained tools, work planning, procedures, PPE	N	2	5	1	2	20								
Welding sub-assemblies	UV eye damage	Appropriate welding hood/goggles/glasses, welding screens, training, work planning, backup person/watch	N	2	5	1	1	10								
Welding sub-assemblies	Burns	Gloves, PPE, training, work planning, backup person/watch	N	2	5	1	2	20								
Checking fit of sub-assembly	Struck by falling parts	Appropriate rigging and supports, work, backup person/watch-planning	N	2	5	3	1	30								
Welding sub-assembly into system	fire	Confined space permit, Cutting/Welding Permit, protect super insulation with welding blanket or remove, training, work planning, backup person/watch	N	2	5	3	1	30								
Welding sub-assembly into system	Toxic fumes	Confined space permit, ventilation, training, work planning, backup person/watch	N	1	5	3	2	30								

Welding sub-assembly into system	Burns	Confined space permit, gloves, PPE, training, work planning, backup person/watch	N	2	5	1	2	20								
Welding sub-assembly into system	UV eye damage	Confined space permit, appropriate welding hood/goggles/glasses, training, work planning, backup person/watch	N	2	5	1	1	10								
Leak Testing with Sniffer	Struck by flying parts	Confined space permit, proof testing, PPE, training, work planning, backup person/watch	N	1	3	3	1	9								
Further Description of Controls Added to Reduce Risk:																
*Risk:	0 to 20		21 to 40			41-60				61 to 80				81 or greater		
	Negligible		Acceptable			Moderate				Substantial				Intolerable		